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### **REMARKS**

In the Office Action, the Examiner noted that claims 1-27 are pending in the application and that claims 1-27 are rejected. In view of the following discussion, the Applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U.S.C. §102 or are obvious under the provisions of 35 U.S.C. §103. Thus, the Applicants believe that all of these claims are now in condition for allowance.

#### **I. REJECTION OF CLAIMS 1-3, 7, 12, 13, 18, 21, 24 AND 27 UNDER 35 U.S.C. §102**

The Examiner rejected claims 1-3, 7, 12, 13, 18, 21, 24 and 27 as being anticipated by the Rantalainen patent application publication (United States patent application publication number 2002/0107028, filed February 2, 2001, hereinafter Rantalainen). The rejection is respectfully traversed.

Rantalainen teaches a method and system for estimating the location of a mobile station in a cellular radio network having a reference base station and a plurality of neighboring base stations capable of communicating with the mobile station. At the beginning of the E-OTD measurements, the mobile station may be provided with the expected OTD values in the reference base station site, possibly instead of RTD values of the neighboring base stations, in order to make it possible for the mobile station can calculate the uncertainty in the measured OTD due to the unknown location of the mobile station (see Abstract).

Rantalainen, however, does not teach each and every element of Applicants' invention as recited in independent claims 1, 18, 21, 24, and 27. Namely, Rantalainen does not teach or suggest the simulcasting of signals to a mobile station from a plurality of base stations. Specifically, Applicants' independent claims 1, 18, 21, 24 and 27 respectively recite:

1. A method for determining the location of a mobile station, comprising:  
receiving a plurality of simulcast signals from respective base stations;  
determining relative time of arrival information for the received plurality of simulcast signals; and  
determining the position of the mobile station. (Emphasis added)

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18. A method for receiving location information for a mobile station, comprising:  
transmitting simulcast signals to the mobile station; and  
receiving mobile station location information from the mobile station determined  
from relative time of arrival information for the simulcast signals. (Emphasis added)

21. A mobile station, comprising:  
a receiver for receiving simulcast signals from a plurality of base stations; and  
a processor for determining time of arrival information for the received simulcast  
signals and identifying a location of the mobile station. (Emphasis added)

24. A wireless network for providing location specific information to a mobile station,  
comprising:  
a plurality of base stations for transmitting simulcast signals;  
a mobile station for receiving the simulcast signals and determining a location of  
the mobile station. (Emphasis added)

27. A wireless network, comprising:  
a plurality of base stations for transmitting simulcast signals to mobile stations  
and receiving mobile station location information from at least one of the mobile stations  
to broadcast location specific information to the mobile stations. (Emphasis added)

The Applicants' invention teaches a method for determining the location of a mobile station utilizing simulcasted signals that are transmitted from a plurality of base stations. Simulcasting is the transmission of a particular signal from a plurality of base stations at the same moment in time. Specifically, the Applicants describe simulcasting as the "simultaneous transmission of the same information content from multiple base stations" (see Applicants' specification, page 5, paragraph 3).

Conversely, the Rantalainen reference does not teach this aspect of the invention. In fact, Rantaleainen discloses that different base stations transmit their respective signals at different times. Specifically, in paragraph 0002, lines 28-29, the Rantalainen reference states that transmissions from "the neighboring base stations are not synchronized with the serving base station." The Applicants respectfully submit that this is not "simulcasting."

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). Since Rantalainen does not disclose a plurality of base stations simulcasting signals to a mobile device, Rantalainen does not teach each and every element of the Applicants' invention as set forth in claims 1, 18, 21, 24 and 27.

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Therefore, the Applicants contend that claims 1, 18, 21, 24 and 27 are not anticipated by Rantalainen and, as such, fully satisfy the requirements of 35 U.S.C. §102.

Dependent claims 2-3, 7, 12, and 13 depend, either directly or indirectly, from claim 1 and recite additional features thereof. As such and for the exact same reasons set forth above, the Applicants submit that claims 2-3, 7, 12, and 13 are not anticipated by the teachings of Rantalainen. Therefore, the Applicants submit that claims 2-3, 7, 12, and 13 fully satisfy the requirements of 35 U.S.C. §102 and are patentable thereunder.

## **II. REJECTION OF CLAIMS UNDER 35 U.S.C. §103**

### **A. Claims 4-6, 19, 20, 22, and 25**

The Examiner rejected claims 4-6, 19, 20, 22, and 25 as being unpatentable over Rantalainen in view of Baum et al. (United States patent 5,867,478, issued February 2, 1999, hereinafter Baum). The rejection is respectfully traversed.

Rantalainen is discussed above.

Baum teaches a method, system, software, and apparatus for synchronous coherent orthogonal frequency division multiplexing (SC-OFDM). More specifically, each of a plurality of SC-OFDM transmitters is synchronized to a reference, which is derived from a common source, for transmitting SC-OFDM signals to a plurality of SC-OFDM receivers. The SC-OFDM signals each have a cyclic extension, and the SC-OFDM signals from each SC-OFDM transmitter include at least one pilot code in accordance with the predetermined pilot code scheme.

The Examiner's attention is directed to the fact that Rantalainen and Baum (either singly or in any permissible combination) fail to disclose a method for simulcasting signals from a plurality of base stations to a mobile station as described by the Applicants' invention. Since Baum fails to bridge the substantial gap existing between the Applicants' invention and Rantalainen, the Applicants contend that the combination of Rantalainen and Baum does not teach the Applicants' invention as a whole.

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Therefore, even if the two references could somehow be operably combined (and the Applicants submit that the references cannot be properly combined), the resulting combination of Rantalainen and Baum would still fail to mention or suggest the simultaneous signal transmission from a plurality of base stations to a mobile station as claimed in independent claims 1, 18, 21, and 24.

Thus, the Examiner has failed to present a prima facie case of obviousness in combining Rantalainen with Baum to arrive at the claimed invention of Applicants' claims 4-6, 19, 20, 22, and 25 since these claims depend, either directly or indirectly, from claims 1, 18, 21, and 24. Therefore, the Applicants submit that claims 4-6, 19, 20, 22, and 25 fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Withdrawal of the rejection is respectfully requested.

#### **B. Claims 8-11**

The Examiner rejected claims 8-11 as being unpatentable over Rantalainen. The rejection is respectfully traversed. Rantalainen is discussed above.

The Examiner states the Rantalainen fails to disclose various techniques of locating a mobile station such as GPS, Doppler Shift, and locus points. However, the Examiner contends that such techniques are well known in the art, and thus, takes official notice as such. Regardless, the Examiner's attention is directed to the fact that Rantalainen in view of the official notice fails to disclose the simultaneous transmissions of a signal (i.e., simulcasting) from a plurality of base stations to a mobile station as described by the Applicants' invention. Since the combination of the Rantalainen and the official notice references fails to teach or suggest the Applicants' invention as a whole, the Applicants contend that claims 1, 18, 21, 24 and 27 are not made obvious by Rantalainen in view of the official notice and, as such, fully satisfy the requirements of 35 U.S.C. §103. Furthermore, the Applicants respectfully request that the Examiner provide support for the Examiner's Official Notice. In particular, the Applicants respectfully request that the Examiner provide some reference that teaches or suggests the various techniques of locating a mobile station, which are referred to on page 5 of the Office Action.

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Dependent claims 8-11 depend, either directly or indirectly, from claim 1 and recite additional features thereof. As such and for the exact same reasons set forth above, the Applicants submit that claims 8-11 are not made obvious by Rantalainen in view of the official notice. Therefore, the Applicants submit that claims 8-11 fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder.

**C. Claims 14-16, 23, and 26**

The Examiner rejected claims 14-16, 23, and 26 as being unpatentable over Rantalainen in view of the Budnik patent (United States patent 6,052,064, issued April 18, 2000, hereinafter Budnik). The rejection is respectfully traversed.

Rantalainen is discussed above.

Budnik teaches a method and apparatus in a wireless messaging system for dynamic creation of directed simulcast zones. The system is optimized for the transmission of an outbound message from a plurality of base transmitters to a portable subscriber unit. In response to an inbound message from a portable subscriber unit, a fixed portion (which comprises a controller and a plurality of base transmitters) of the system makes an estimate of the portable subscriber unit's position.

The Examiner's attention is directed to the fact that Rantalainen and Budnik (either singly or in any permissible combination) fail to disclose the simulcasting of signals from a plurality of base stations that is received at a mobile station as described by the Applicants' invention. Rantalainen fails to teach the simultaneous transmission of signals from a plurality of base stations that is received at a mobile station. Similarly, Budnik also does not teach, suggest, or mention the simultaneous transmission of signals from a plurality of base stations that is received at a mobile station. Since Budnik fails to bridge the substantial gap existing between the Applicants' invention and Rantalainen, the Applicants contend that the combination of Rantalainen and Budnik does not teach the Applicants' invention as a whole.

Therefore, even if the two references could somehow be operably combined (and the Applicants submit that the references cannot be properly combined), the resulting

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combination of Rantalainen and Budnik would still fail to mention or suggest the simultaneous transmission of signals from a plurality of base stations that is received at a mobile station as claimed in independent claims 1, 21, and 24.

Thus, the Examiner has failed to present a prima facie case of obviousness in combining Rantalainen with Budnik to arrive at the claimed invention of Applicants' claims 14-16, 23, and 26 since these claims depend, either directly or indirectly, from claims 1, 21, and 24. Therefore, the Applicants submit that claims 14-16, 23, and 26 fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Withdrawal of the rejection is respectfully requested.

#### **D. Claim 17**

The Examiner rejected claims 14-16, 23, and 26 as being unpatentable over Rantalainen in view of Budnik in further view of Oren et al. (United States patent 6,725,045, issued April 20, 2004, hereinafter Oren). The rejection is respectfully traversed.

Rantalainen and Budnik are discussed above.

Oren teaches a method and system for locating people and routing telephone calls to telephone stations selected by the called party. According to some embodiments of the present invention, the system may include wireless personal units and a location and routing unit adapted to locate the personal units and to route an incoming call intended for a telephone user associated with a particular personal unit to any one of the telephone stations selected by the telephone user (see Abstract).

The Examiner's attention is directed to the fact that Rantalainen, Budnik, and Oren (either singly or in any permissible combination) fail to disclose the simulcasting of signals from a plurality of base stations that is received at a mobile station as described by the Applicants' invention. Both Rantalainen and Budnik fail to teach the simultaneous transmission of signals from a plurality of base stations that is received at a mobile station. Similarly, Oren also does not teach, suggest, or mention the simultaneous transmission of signals from a plurality of base stations that is received at a mobile station. Since Oren fails to bridge the substantial gap existing between the

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Applicants' invention and the combination of Rantalainen and Budnik, the Applicants contend that the combination of Rantalainen, Budnik, and Oren does not teach the Applicants' invention as a whole.

Therefore, even if the three references could somehow be operably combined (and the Applicants submit that the references cannot be properly combined), the resulting combination of Rantalainen, Budnik, and Oren would still fail to mention or suggest the simultaneous transmission of signals from a plurality of base stations that is received at a mobile station as claimed in independent claim 1.

Thus, the Examiner has failed to present a prima facie case of obviousness in combining Oren with Rantalainen and Budnik to arrive at the claimed invention of Applicants' claim 17 since this claim depends indirectly from claim 1. Therefore, the Applicants submit that claim 17 fully satisfies the requirements of 35 U.S.C. §103 and is patentable thereunder. Withdrawal of the rejection is respectfully requested.

### **III. CONCLUSION**

Thus, Applicants submit that none of the claims presently in the application are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. §103. Consequently, Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

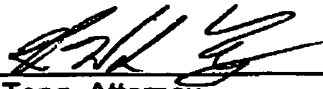
If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested

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that the Examiner telephone Mr. Kin-Wah Tong at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

4/7/05  
Date

  
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